

Listing of Claims

1. (amended) An automatic tablet-cutting device comprising:

-a tablet-guide apparatus having a tablet-receiving portion and a tablet-guide portion along which a tablet is directed from the receiving portion to a tablet-cutter apparatus;
-tablet-alignment apparatus positioned with respect to the tablet-guide, the tablet-alignment apparatus comprising:

-an alignment member having a tablet-contact surface spaced apart from the tablet[-] guide to form a cavity with a decreasing cross-section therebetween, the tablet-contact surface and tablet[-]guide coating to orient the tablet with a tablet primary axis substantially parallel to a first direction; and

-at least one alignment element movably mounted to contact the oriented tablet and move the tablet into alignment for cutting at a cutting position; and
-the tablet-cutter apparatus is positioned to contact the aligned tablet and cut the tablet substantially in half.

2. (original) The device of claim 1 wherein the tablet-guide portion includes a guide surface in contact with the tablet.

3. (original) The device of claim 2 wherein the guide surface comprises plural surface portions and the guide surface has a v-shaped cross section.

4. (original) The device of claim 2 wherein the guide surface is inclined.

5. (amended) The device of claim 2 wherein the alignment member is movably mounted between at least an alignment position in which the tablet-contact surface and tablet- guide surfaces coact to orient the tablet with the primary axis substantially parallel to the first direction and a further position in which the tablet-contact surface is positioned out of contact with the tablet.

6. (amended) The device of claim 2 wherein the alignment member comprises:

-a cylindrically-shaped body mounted for rotation in a first direction, the body having a circumferential surface comprising the tablet contact tablet-contact surface, the body mounted so that body rotation in the first direction moves a tablet positioned against the tablet contact tablet-contact surface in the cavity thereby orienting the tablet; and

-a member mounted for movement in a second direction and positioned concentrically around at least a portion of the tablet-contact surface and having a tablet-contact portion, the member mounted so that rotation in the second direction moves the tablet-contact portion against the aligned tablet and moves the tablet to the tablet-cutter apparatus for cutting.

7. (amended) The device of claim 2 wherein the alignment member comprises a cylindrically-shaped body mounted for bi-directional rotation in first and second directions, the body having:

-a circumferential surface comprising the tablet contact tablet-contact surface;
-a cut-out portion along the tablet-contact surface having first and second surfaces forming a tablet-receiving groove; and
-rotation of the body in the first direction moves a tablet positioned against the tablet-contact surface in the cavity thereby orienting the tablet and rotation of the body in the second direction positions the oriented tablet in the groove with the first and second surfaces coacting to hold the aligned tablet and move the tablet to the tablet-cutter apparatus for cutting.

8. (amended) The device of claim 1 wherein the at least one alignment apparatus element includes first and second alignment elements each mounted for movement between at least position in which the elements [[is]] are out of contact with the tablet and a further position in which the elements synchronously move together to contact the oriented tablet and move the tablet into alignment for cutting.

9. (amended) The device of claim 1 further including biasing apparatus positioned with respect to the tablet in the tablet[[-]]guide, said biasing apparatus providing a force against the tablet so that the tablet is firmly, but not crushingly, held for cutting by the tablet-cutter apparatus.

10. (amended) The device of claim 1 wherein the tablet-cutter apparatus comprises:

- a rotary saw blade mounted for rotational movement to cut an aligned tablet; and
- a motor operatively connected to the blade for rotating the blade.

11. (amended) The device of claim 1 further including vacuum apparatus positioned with respect to the tablet-cutter apparatus, the vacuum apparatus including:

- air-flow apparatus positioned to move particulate-containing air away from the cutter apparatus and through at least one filter; and
- the at least one filter includes at least one surface ~~removing the cut-tablet adapted to~~ remove particulates.

12. (amended) An automatic tablet-cutting device comprising:

-~~tablet-guide apparatus~~ a tablet guide having a tablet-receiving portion and a ~~tablet-guide~~ portion along which a tablet is directed from the receiving portion to a tablet-cutter apparatus;

-~~tablet-alignment apparatus~~ positioned with respect to the ~~tablet-guide~~ tablet guide and tablet-cutter apparatus, the alignment apparatus comprising:

-an alignment member having a tablet-contact surface spaced apart from the tablet guide to form a cavity with a decreasing cross-section therebetween, the tablet contact surface and tablet guide coacting to orient the tablet with a tablet primary axis substantially parallel to a first direction; and

-at least one alignment element movably mounted to contact the oriented tablet and move the tablet into alignment for cutting at a cutting position; and

-tablet-cutter apparatus for cutting the aligned tablet, the tablet-cutter apparatus including a cutting surface movable between a first position in which the cutting surface is positioned out of contact with the tablet and a second position in which the cutting surface cuts the tablet substantially in half.

13. (amended) The device of claim 12 wherein the ~~tablet-guide~~ tablet guide is inclined.

14. (amended) The device of claim 13 wherein the ~~tablet-guide~~ tablet guide includes at least one guide surface configured to align the tablet primary axis in a direction substantially parallel with a tablet-guide axis.

15. (original) The device of claim 14 wherein the guide surface comprises plural surfaces including a v-shaped cross section and the plural guide surfaces coact to orient the tablet so that the tablet primary axis is substantially parallel to the tablet-guide axis.

16. (amended) The device of claim 12 wherein the tablet-guide tablet guide further includes a tablet-guide portion onto which cut tablet portions are directed from the tablet-cutter apparatus to a tablet-guide end.

17. (amended) The device of claim 15 wherein the alignment member is movably mounted between at least an alignment position in which the tablet-contact surface and tablet-guide tablet guide surfaces coact to orient the tablet with the primary axis parallel to the first direction and a release position in which the tablet-contact surface is positioned out of contact with the tablet.

18. (amended) The device of claim 17 wherein the alignment member comprises:

-a support member movably mounted between at least the alignment and release positions;

-a body pivotally mounted on the support member, the body including the tablet-contact surface, an upstream end, a downstream end and attachment structure movably mounting the body to the support member along the body upstream end; and

-biasing apparatus acting against the body to urge the tablet-contact surface toward the ~~tablet-guide surface~~ tablet guide surfaces so that, in the alignment position, the tablet is contacted for alignment by the tablet-contact surface and ~~tablet-guide surface~~ tablet guide surfaces.

19. (amended) The device of claim 12 wherein the at least one alignment apparatus element includes first and second alignment elements each mounted for movement between at least a position in which the elements [[is]] are out of contact with the tablet and a further position in which the elements synchronously move together to contact the oriented tablet and move the tablet into alignment for cutting.

20. (amended) The device of claim 19 wherein:

- the tablet-cutter apparatus cutting surface is perpendicular to a tablet-guide axis;
 - the first tablet-alignment element has an alignment portion mounted for movement at a position along the tablet-guide tablet guide upstream of the tablet-cutter apparatus;
 - the second tablet-alignment element has an alignment portion mounted for movement at a position along the tablet-guide tablet guide downstream of the tablet-cutter apparatus; and
- 1 further including:
- actuator apparatus operatively connected to the first and second tablet-alignment elements for moving such elements between at least:
 - a first position in which the second element alignment portion is positioned in the tablet guide and the first element alignment portion is positioned out of the tablet guide;
 - a second position in which the first and second element alignment portions are in the tablet guide and are synchronously moved together along the tablet-guide axis to contact a tablet positioned between said alignment portions thereby aligning the tablet for cutting at the cutting position; and
 - a third position in which at least the second element alignment portion is positioned out of the tablet guide to avoid engagement with a tablet on the tablet guide surface.

21. (amended) The device of claim 12 wherein the tablet-cutter apparatus comprises:

- a rotary saw blade including the cutting surface and the blade is mounted for movement between the first and second positions; and
- a motor operatively connected to the blade for rotating the blade.

22. (original) The device of claim 21 wherein the blade has an axis perpendicular to a tablet-guide axis and the blade cuts the tablet along a tablet axis perpendicular to the tablet-guide axis.

23. (amended) The device of claim 12 further comprising ejector apparatus positioned with respect to the tablet-cutter apparatus, the ejector apparatus comprising

-an ejector element movable between a ready position in which the ejector element is out of contact with the tablet and an ejection position in which a contact portion contacts cut tablet portions and urges such portions away from the tablet-cutter apparatus; and

-an actuator coupled to the ejector element for moving the ejector element between the ready and ejection positions.

24. (amended) The device of claim 12 further including vacuum apparatus positioned with respect to the tablet-cutter apparatus, the vacuum apparatus including:

-air-flow apparatus positioned to move particulate-containing air away from the tablet-cutter apparatus and through at least one filter; and

-the at least one filter includes at least one surface removing the cut-tablet adapted to remove particulates.

25. (amended) A method of automatically cutting a tablet into tablet portions having substantially equal volume comprising the steps of:

- positioning the tablet along a ~~tablet-guide~~ tablet guide;
- automatically orienting the tablet into an orientation in which a tablet first primary axis is parallel to a first direction;
- automatically moving the tablet in such orientation along the ~~tablet-guide~~ tablet guide into alignment for cutting at a cutting position; and
- cutting the aligned tablet.

26. (amended) The method of claim 25 wherein the automatic orienting step comprises:

- positioning the tablet on a tablet-guide surface along the ~~tablet-guide~~ tablet guide alignment position; and
- contacting the positioned tablet with a tablet-contact surface, said tablet-contact surface being spaced apart from the tablet-guide surface and positioned to form a cavity with a decreasing cross-section therebetween, the tablet-contact and tablet-guide surfaces coacting to orient the tablet.

27. (original) The method of claim 26 wherein the automatic moving step comprises contacting the oriented tablet with spaced apart first and second alignment elements, said alignment elements synchronously moving together to contact the oriented tablet therebetween, the alignment elements coacting to move the tablet into alignment for cutting at the cutting position.

28. (original) The method of claim 25 further including the step of holding the aligned tablet for cutting.

29. (original) The method of claim 27 including the further step of ejecting cut tablet portions from the cutting position.

30. (original) The method of claim 25 wherein the cutting step comprises sawing the tablet.

31. (original) The method of claim 25 further including the step of removing cut tablet particulates with a vacuum apparatus.

32. (amended) An automatic tablet-cutting device comprising:

-a housing;

-~~tablet-guide apparatus~~ a tablet guide positioned with respect to the housing, the tablet guide ~~apparatus~~ having a tablet-receiving portion and a tablet-guide surface along which a tablet is directed from the receiving portion to tablet-cutter apparatus;

-~~tablet-alignment apparatus~~ positioned with respect to the tablet guide, the tablet-alignment apparatus comprising:

-an alignment member having a tablet-contact surface spaced apart from the ~~tablet-guide~~ tablet guide to form a cavity with a decreasing cross-section therebetween, the tablet-contact surface and tablet-guide surface coacting to orient the tablet with a tablet primary axis substantially parallel to a first direction; and

-first and second movable alignment elements movably mounted between at least a position in which the elements are out of contact with the tablet and a second further position in which the alignment elements synchronously move together to contact the oriented tablet and move the tablet into alignment for cutting at a cutting position; and

-the tablet-cutter apparatus is positioned with respect to the tablet guide to contact the aligned tablet and cut the tablet substantially in half.

33. (amended) The device of claim 32 wherein the alignment member comprises:

-a support member movably mounted between at least an alignment position in which the alignment member is positioned to orient the tablet and a further position in which the alignment member is out of contact with the tablet;

-a body pivotally mounted on the support member, the body including the tablet-contact surface, an upstream end, a downstream end and attachment structure movably mounting the body to the support member along the body upstream end; and

-biasing apparatus acting against the body to urge the tablet-contact surface toward the tablet-guide surface so that, in the alignment position, the tablet is contacted for alignment by the tablet-contact surface and tablet-guide surfaces surface.

34. (amended) The device of claim 33 wherein the tablet-cutter apparatus comprises:

-a rotary saw blade mounted for rotational movement to cut an aligned tablet; and

-a motor operatively connected to the blade for rotating the blade.

35. (amended) The device of claim 32 wherein the alignment member comprises:

- a cylindrically-shaped body mounted for rotation in a first direction, the body having a circumferential surface comprising the tablet contact tablet-contact surface, the body mounted so that body rotation in the first direction moves a tablet positioned against the tablet contact tablet-contact surface in the cavity thereby orienting the tablet; and
- a member mounted for movement in a second direction and positioned concentrically around at least a portion of the tablet-contact surface and having a tablet-contact portion, the member mounted so that rotation in the second direction moves the tablet-contact portion against the aligned tablet and moves the tablet to the tablet-cutter apparatus for cutting.

36. (amended) The device of claim 32 wherein the alignment member comprises a cylindrically-shaped body mounted for bi-directional rotation in first and second directions, the body having:

- a circumferential surface comprising the tablet contact tablet-contact surface;
- a cut-out portion along the tablet-contact surface having first and second surfaces forming a tablet-receiving groove; and
- rotation of the body in the first direction moves a tablet positioned against the tablet-contact surface in the cavity thereby orienting the tablet and rotation of the body in the second direction positions the oriented tablet in the groove with the first and second surfaces coacting to hold the aligned tablet and move the tablet to the tablet-cutter apparatus for cutting.

37. (new) A method of automatically dividing a tablet into tablet portions of substantially equal sizes comprising the steps of:

- directing the fall of a tablet along an inclined tablet guide;
- constraining the fall of the tablet into an orientation in which a tablet first primary axis is parallel to a first direction;
- moving the tablet into alignment for dividing the tablet into the tablet portions; and
- dividing the aligned tablet into the tablet portions.

38. (new) The method of claim 37 wherein the constraining step comprises the step of orienting the tablet by coaction of the tablet guide and a tablet-contact surface.

39. (new) The method of claim 38 wherein the orienting step comprises wedging the tablet between the tablet guide and tablet-contact surface, said tablet guide and tablet-contact surface forming a region with a decreasing space therebetween.

40. (new) The method of claim 37 wherein the moving step comprises the step of contacting the tablet with spaced apart first and second alignment elements.

41. (new) The method of claim 40 wherein the contacting step further comprises the step of synchronously moving together the first and second alignment elements to position the tablet in alignment therebetween.

42. (new) The method of claim 37 further including the step of holding the aligned tablet during dividing of the tablet.

43. (new) The method of claim 37 wherein the dividing step comprises the step of cutting the aligned tablet.

44. (new) A device for automatically dividing a tablet into tablet portions of substantially equal sizes comprising:

- an inclined tablet guide structured to constrain movement of a falling tablet;
- an alignment member structured to constrain the falling tablet into an orientation in which a tablet first primary axis is parallel to a first direction;
- at least one alignment element structured to contact the tablet and move the tablet into alignment for dividing of the tablet into the tablet portions; and
- tablet-dividing apparatus structured to contact the oriented, aligned tablet and divide the tablet into the table portions.

45. (new) The device of claim 44 wherein the inclined tablet guide comprises:

- a tablet-receiving portion; and
- a tablet-guide surface along which the tablet is directed from the receiving portion to the alignment member.

46. (new) The device of claim 45 wherein the tablet-guide surface comprises plural surface portions and the tablet-guide surface has a v-shaped cross section.

47. (new) The device of claim 45 wherein the alignment member has a tablet-contact surface spaced apart from the tablet-guide surface to form a region with a decreasing space therebetween, the tablet-contact surface and tablet-guide surface coacting to orient the tablet with the tablet primary axis substantially parallel to the first direction.

48. (new) The device of claim 47 wherein the alignment member is movably mounted between at least an alignment position in which the tablet-contact surface and tablet-guide surface coact to orient the tablet with the primary axis substantially parallel to the first direction and a further position in which the tablet-contact surface is positioned out of contact with the tablet.

49. (new) The device of claim 44 wherein the at least one alignment element comprises:
-a first alignment element;
-a second alignment element; and
-each of said first and second elements is mounted for movement such that the elements contact the oriented tablet and move the tablet into alignment.

50. (new) The device of claim 44 wherein the tablet-dividing apparatus comprises:
-a rotary saw blade mounted for rotational movement to cut an aligned tablet; and
-a motor operatively connected to the blade for rotating the blade.

51. (new) The device of claim 44 further including vacuum apparatus positioned with respect to the saw for removing particulates resulting from dividing of the tablets, the vacuum apparatus including:
-air-flow apparatus positioned to move particulate-containing air away from the dividing apparatus and through at least one filter; and
-the at least one filter includes surface structure adapted to remove tablet particulates.